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St. Bartholomew's Hospital Journal,

JANUARY 14th, 1897.

"Æquam memento rebus in arduis
Servare mentem."—*Horace,* Book ii, Ode iii.

Pathological Jottings.

By A. A. KANTHACK, M.D., Lecturer on Pathology.

III.—FATTY DEGENERATION.

FATTY changes are observed in the tissues and organs in many diseases and under the most varied conditions. Although they are as a rule the effect of a general lesion, it is obvious that they themselves must produce disturbances and impairment of function, and may become the starting-point or cause of other lesions and morbid states. Before discussing the nature of fatty changes it will be advisable shortly to state the varieties of fatty changes as they are generally found in the body.

1. We may have first an *accumulation of fat in situations where it normally exists, e.g.* (*a*) in the panniculus adiposus; (*b*) in the omental tissues; (*c*) in the epicardium; (*d*) in the bone-marrow; and (*e*) in the liver, where at certain periods after the ingestion of food fat is always found.

Such accumulation may be (1) temporary or transient, as, for instance, in the athlete who is "beefy" and out of training, and then it is hardly pathological; or it may be (2) permanent and lasting, when it is morbid. Thus in obesity or lipomatosis, to adhere to the modern language, there is always a considerable storage of fat in the subcutaneous and omental tissues, and the liver of a beer-drinker, especially of one devoted to German "Bräu," is generally exceedingly fatty. The accumulation obviously must be due to one of two processes, or probably to both of them: either the supply of fat-forming material is excessive, and too much fat is formed by the cells; or the fat formed is not split up as quickly or completely as it ought to be, because the cells are badly nourished, exhausted, or impaired somehow. It is evident that when the accumulation has been carried to excess, or has been allowed to persist for a long time, gradually the functions of the fat-laden organ or tissues become impaired, and therefore, if the causes which in the first instance led to the fatty changes prevail, the combustion or splitting up of the deposited fat will also be impaired, so that the vicious circle is once more established:—impairment of the cell function leads to fat accumulation, the latter increases the impairment of the cell function, and so on. When we have said that the accumulation of fat is due either to over-production of fat or to failure of combustion, or to both, we have merely suggested what is obvious, but we have not given an explanation of the process. We do not know why fat should be stored up in some people and not in others living under the same conditions, why obesity should be commoner amongst women than amongst men. Some people "run into fat" on any diet, and whatever they may do to keep their flesh down; others it is impossible to fatten anyhow. We do not understand the idiosyncrasies of the individuals, nor the relations which exist between sex and obesity, between reproductive activity, ovarian, uterine, or thyroid disease and obesity, nor do we understand the laws of heredity or inherited tendencies, and

theoretical explanations which are merely paraphrases do not advance matters one jot. If we say that the accumulation of fat is due to want of oxidation, does that tell us why in an active or otherwise healthy woman the menopause, or some uterine or ovarian disease, should produce lipomatosis? One can understand partly why alcohol should produce an accumulation of fat, because we know that it impairs oxidation, but what one cannot understand is why it should produce such accumulation only in some individuals.

We cannot, therefore, state in concise and definite terms the causes of fat accumulation; all we can do is to draw attention to some leading, or it may be predisposing factors. Amongst these we have (*a*) inherited or congenital tendencies; (*b*) certain habits of life, such as indolence and sedentary seclusion; (*c*) errors of diet; (*d*) chronic poisoning (*e.g.* alcohol); (*e*) sex, and diseases and morbid states of the reproductive organs in women; (*f*) morbid states of the liver, or pancreas (?), or thyroid gland (?).

The feature of a truly morbid accumulation of fat is its progressiveness, and that, as we have seen, is easily understood. So long as it is merely an exaggeration of ordinary physiological conditions, and due to errors in living, eating and drinking, it may be set right again by correcting these errors, if the uncontrollable tendencies or morbid states be absent.

2. Secondly, we may have *an extension of fat into tissues which normally are free from fat.*

Thus fat may appear (*a*) in the intermuscular tissue of the heart, spreading thither from the epicardial fat; (*b*) in the interstitial tissue of skeletal muscle; and (*c*) in the endocardial connective tissue.

In the fatty heart of an obese person we have first an accumulation of the epicardial fat, which then spreads between the muscle-fibres, especially of the right ventricle, and may extend until it reaches the connective tissue under the endocardium. These changes are most commonly observed in lipomatosis.

The condition just defined, and that previously described as fat accumulation, are generally included under the single term *infiltration.* The accumulation and the extension of fat along the interstitial tissue commonly occur together in the same organ, and in the same individual they may affect one organ alone, or all the organs and tissues capable of fatty changes; or fat accumulation may be so local as to produce a distinct tumour—a lipoma. In fatty accumulation the fat is, as a rule, collected in the cell in the shape of large drops or droplets, the nucleus being generally pushed to one side; the cell substance or protoplasm is sound, and after disappearance of the fat shows no defects.

3. We must now pass to the third process, viz. *fatty degeneration.* In fatty accumulation the fat is formed in the cell and stored up by it, but *if the fat is formed at the expense of the cell albumen the result is fatty degeneration.* The cell substance then becomes obscured, and contains larger globules or numberless small granular droplets of fat, which may be so densely packed as to hide the nucleus of the cell or obscure the structure of the tissue. The cell protoplasm eventually is destroyed, so that on dissolving the fat out the cell would appear vacuolated. Fatty degeneration is, therefore, a destructive process, a metamorphosis. It is best studied in the cardiac and voluntary muscles, in the liver cells and renal epithelium, in the pus cells and nervous tissues.

The causes of fatty degeneration must be conditions which produce serious disturbance of the nutrition or vitality of the cells. Amongst these the principal are (*a*) changes in the blood and nutriment supplied to the cells, as, for instance, in diabetes and various forms of cachexia; (*b*) vital depression and asphyxia of the tissues, *e. g.* venous engorgement, inflammation, pressure, fever, and starvation; (*c*) local and general anæmia, *e. g.* hæmorrhages, leukæmia, pernicious anæmia, and carbon monoxide poisoning; (*d*) intoxications, which include (1) bacterial intoxications (infective fevers, such as diphtheria, pneumonia, &c.); (2) intoxications by chemical poisons, such as phosphorus, arsenic, carbolic acid, corrosive sublimate, and alcohol; (3) so-called auto-intoxications (*e. g.* acute yellow atrophy); (*e*) nervous lesions, which may lead to fatty degeneration in the muscles; (*f*) disuse of the muscles from whatever cause; (*g*) fatty accumulation and infiltration.

The extent of the fatty degeneration varies with the condition producing it. Thus a local anæmia, circumscribed pressure, or a focal inflammation can only produce a limited area of degeneration. Given a general cause, certain organs are more predisposed than others—as, for instance, the liver, heart, and kidneys; but one organ may be affected while others escape, although the cause be a general one. Thus, in leukæmia, the heart shows the fatty degeneration more strikingly than other organs, or it may be the part solely affected. In a single organ the degeneration, again, may be general or focal. Thus, in the kidney, the cortex, as a rule, suffers alone, and often only the irregular and second convoluted tubules or the loops of Henle, although the cause be a general intoxication (*e. g.* diphtheria).

As to the process of degeneration in the cell our knowledge is a blank. Gautier's view is that, under physiological conditions, the cell passes through two phases: (*a*) one of hydrolysis, during which the protoplasm changes into urea and its allies, and the carbohydrates are converted into fat. This is followed by (*b*) the second phase of oxidation, during which the sugars partly disappear, partly change into fat, and eventually the fats are burnt up. Imperfect oxidation, therefore, would produce a change of the cell protoplasm into fat. Pavy, who holds that protoplasm is a glucoside, believes that through some ferment action the carbo-

hydrate nucleus is converted into a hydrocarbon. Both views are unsatisfactory; Pavy's because there is no certain evidence regarding the glucoside nature of protoplasm, and Gautier's because it belongs to the realm of pure theory.

An important point is that long-continued or excessive fatty accumulation will lead to fatty degeneration. We may observe this in the heart, pancreas, or liver. The fat, which has extended into, and accumulated in, the intermuscular substance, produces pressure on the muscular fibres, and thus impairs their nutrition, and the result is fatty degeneration. Similarly, a liver heavy with accumulated fat eventually degenerates, and in a fatty pancreas the glandular substance also becomes fatty, and finally may disappear altogether. This is due to two factors: (*a*) the fat accumulation reacts deleteriously on the vitality of the nobler structures; and (*b*) the agent which produced this accumulation is often a tissue poison (*e. g.* alcohol), which, causing first an accumulation of fat, will then continue to act on the already impaired tissues and advance the degeneration. Similarly, the continued consumption of carbohydrates must be harmful to liver cells already overloaded with fat.

We may now briefly study the fatty changes in the more important tissues or organs.

(1) *Heart.*—Here we may have (*a*) an accumulation of the epicardial fat, which may become so excessive as to almost surround the whole heart. (*b*) This fat may spread into the myocardium along the intermuscular tissue, and may there increase considerably and extend as far as the subendocardial tissue. (*c*) This accumulation of fat around and between the muscular substance of the heart may cause fatty degeneration of the muscular fibres themselves. (*d*) The degeneration of the myocardium may be primary, without there being any accumulation of the fat normally existing. It is then generally patchy, giving rise to the well-known "tabby-cat" striation, and the degenerated fibres appear granular and are obscured by innumerable minute droplets of fat, and lose all striation.

(2) *Voluntary Muscles.*—The changes observed in these structures are exactly analogous to those in the cardiac muscle.

(3) *Kidney.*—The fatty changes in the kidney are always degenerative, and they generally accompany other lesions, such as so-called parenchymatous or interstitial nephritis. Occasionally, however, they occur independently,—for instance, as the result of phosphorus, arsenic, metallic or carbolic acid poisoning, or as the result of anæmia, diabetes, infective fevers, or circulatory disturbances. They may be diffuse or focal, and in either case are generally restricted to the cortex. When focal—as, *e.g.*, in diphtheria—the loops of Henle and second convoluted tubules are affected; when general the degeneration spreads also to the large convoluted tubules, the Malpighian bodies, and even the connective tissue. The fat droplets appear first in the part of the cell nearest the membrana propria, then gradually they occupy the whole cell, and eventually the cell may break down completely and be cast off. Sometimes large globules of fat are found, considerably distending the cells.

(4) *Aorta.*—The branched cells of the intima are filled with innumerable droplets of fat, the nucleus being obscured, although itself often not degenerated. The fatty changes are best observed in certain stages of atheroma.

(5) *Nerves and Nervous Tracts.*—Fatty changes in nerves are easily recognised in so-called peripheral neuritis. The myelin sheath breaks up into globules and irregular masses of fat, which stain intensely black with osmic acid, and analogous changes may be observed in the cord in cases of degeneration, whether ascending or descending. The result of degeneration of the nerves controlling movement is of course impairment of muscular function, and this is accompanied by the fatty changes above alluded to. It may here be remarked that normal myelin does not stain black with Marchi's fluid (solution osmic acid in dilute Müller's fluid), although ordinary body fat (which is a neutral fat) does. The myelin has therefore been changed into fat.

(6) *Liver.*—Lastly, we come to a consideration of the fatty changes in the liver. Next to the heart they have been most completely studied in this organ. Generally a careful distinction is drawn between fatty infiltration and fatty degeneration. It will be seen that I have scrupulously avoided the term infiltration, because there is no evidence whatever that fat is ever infiltrated. It is formed normally under certain conditions in the liver, but how it is formed we do not know. It is presumably the function of the liver cells to manufacture fat, but what justification is there for calling the process an infiltration? The intestinal epithelium absorbs fat from the intestinal contents, and leucocytes and phagocytes take up fat granules from a degenerated area: these are the nearest approaches to an infiltration; it is, however, an ingestion, followed probably by assimilation and digestion. The fat appearing in the tissues under normal conditions, whether in the secreting mammary gland in the liver, or in the panniculus adiposus, has been produced by chemical action or by a fatty metamorphosis from the albuminous cell protoplasm, and that cannot be called an infiltration. In fact, the physiological secretion of milk depends on a true, though partial, fatty degeneration of the cells lining the alveoli.

Pathologists, as we have said, are in the habit of distinguishing between the fatty infiltration and degeneration in the liver, and their criteria are partly anatomical, partly morphological. Thus in fatty infiltration the globules are said to be large, and arranged either at the periphery of the liver acini, or centrally around the intra-acinous vein, or in the interstitial tissue between the acini; while in degeneration the droplets are said to be small, to cover the whole cell surface, and the metamorphosis is stated to be as

a rule general. It is asserted that in the former case the fat has been stored up in the cell, in the latter it has been formed at the expense of the cell substance. Most observers describe infiltration in obesity, nutmeg liver, phthisis, cirrhosis, and similar conditions on account of the anatomical distribution and morphological appearances of the fat. We can understand that in obesity, at least in the early stages, there would be an accumulation of fat without the cell suffering, the cell being over-active and forming fat from the material generally supplied in excess; but we cannot understand that a true accumulation or infiltration could occur in diseases in which the fat disappears from the subcutaneous and omental tissues, *i. e.* in wasting diseases. In them the fat must have been formed in the cell, and at the expense of the cell, whether the appearances are those of infiltration, or degeneration as generally described. In the obese person the liver cells, after forming an excess of fat, are capable of replacing the cell albumen which has been used up in the manufacture of fat, and only when they cease to do this degeneration will also appear. As Cohnheim puts it, the guiding rule of distinction between degeneration and infiltration, or, as I prefer to say, accumulation, is this: "does the fat occupy a cell with diminished or normal albuminous contents?" In the early stages of obesity there is merely an accumulation of fat in the "legitimate localities;" in the later stages this becomes excessive, and the fat extends beyond these localities, and as far as the liver is concerned, instead of being restricted to the periphery of the lobule occupies the whole of it, producing a large fatty liver. The accumulation of fat in this case is probably due to the two factors mentioned previously, viz. incomplete oxidation and excessive supply of the precursors of fat; it is not, to begin with, an atrophy, although eventually this also may follow in some of the organs (*e. g.* heart and liver). We must agree with Cohnheim that the fatty changes observed in the liver with anæmia, phthisis, cancer, &c., are all true fatty atrophies, whatever they may appear to be on histological rules laid down more or less arbitrarily. In phthisis the fat is often found in large drops at the periphery of the hepatic lobule, and many describe this as infiltration or accumulation without degeneration. They believe that the excessively fatty liver of absolutely emaciated consumptives is due to an infiltration with fat, which has been formed elsewhere during the process of wasting. How can it be? The fat must have been formed at the expense of the cell substance, and it remains *in situ* on account of diminished combustion. The fatty changes of starvation are also certainly atrophic.

Hence I can only regard as accumulation—or infiltration, to use the more familiar term—(*a*) the normal physiological storage of fat, (*b*) the transient accumulation in those of sedentary habits, and (*c*) all but the most advanced stages of obesity. All the other conditions are atrophic, *i. e.* fatty degeneration. But that being so, as far as the liver is concerned, we must distinguish two varieties of fatty degeneration. (1) In one the destruction or disintegration of the cell albumen is rapid and excessive, so that the cells break down quickly,—as, for instance, in acute yellow atrophy, phosphorus and arsenic poisoning; (2) in the other the cell destruction is very slow, so that the fat formed at the expense of the cell substance has a chance of accumulating for a long time (*e. g.* phthisis, anæmia, cachexia). The local fatty changes in the liver are also atrophic, and may be produced by pressure of tumours or by the contraction of newly formed fibrous tissue. It is curious that Ribbert considers that the fatty changes in cirrhosis of the liver are generally due to infiltration. There can be hardly any doubt that they are atrophic, and some observers go even so far as to believe that the atrophy is the primary factor which stimulates the interstitial tissue to repair. "*Degenerate tissue, if not regenerated, is replaced by connective or fibrous tissue.*"

This brings us to the last point, viz. the determination of fatty changes. An accumulation may either disappear by oxidation and resorption on change of habits, or it may pass on to degeneration. Degeneration, especially if local, may be repaired by restitution of the tissue (*e. g.* in muscles and nerves), the fat granules being removed by phagocytosis or oxidation; or it may end in complete disintegration, death, and necrosis, and may then be replaced by fibrous tissue, *e. g.* sclerosis of voluntary muscle or of the nervous tracts in the cord, in accordance with the law expressed above.

I am glad to find that also on this subject of Fatty Changes I find myself almost completely in accord with Cohnheim. We must use the terms Infiltration and Degeneration critically, and if we apply physiological and biological facts, we must come to the conclusion that many of the ordinary criteria are arbitrary, and that the term Infiltration had better be abandoned altogether.

In my next article I shall discuss the subject of Amyloid Degeneration.

The Details of Ovariotomy and Disputed Points in After-Treatment.

By ALBAN DORAN, F.R.C.S., Surgeon to the Samaritan Free Hospital.

A Paper read before the Abernethian Society on November 12th, 1896.

OVARIOTOMY need no longer be discussed as was the custom between 1858 and 1878. Sir Spencer Wells, who had a larger share than any other surgeon in establishing it as a legitimate operation, gained his point by great attention to matters of detail. In this respect Wells's method remains the right method—the basis, in fact, of modern abdominal surgery, of which ovariotomy is the type. The merits

and demerits of each step in an operation, each instrument, each material for ligature, suture, and so forth, are to be discussed and reported, so that the evil—as in the case of the clamp—may be made clear as well as the good. On the other hand, we may dispense with all arguments, now superfluous, as to the justifiability of ovariotomy. When such arguments were needed, Wells and others wrote and acted in a manner which was right and necessary then, but not to be imitated by us who live and work, thanks to these authorities, under altered and improved conditions.

This evening I will briefly review ovariotomy as now practised. Of course, a complete sketch of the operation would require a short course of lectures; but I have selected without difficulty much that is suited for the consideration of the members of a society.

Diagnosis and after-treatment are inseparably bound up with our subject, especially after-treatment, the more so when we find how success is attained by the most opposite ways of managing the patient after she has left the operating table.

After all, diagnosis is only important, at present, in respect to exploration, which is, indeed, a diagnostic agent. An ordinary ovarian cyst, not too closely connected with the uterus, is very easy to detect; but complications may baffle the most experienced clinical observer. Thus menorrhagia in a woman aged about forty, with irregular semi-solid tumours of both ovaries, with short pedicles, may naturally lead the surgeon to suspect uterine myoma, especially if the uterine cavity be enlarged. Indeed, I have seen ovarian disease of this kind co-existent with fibroid disease of the uterus. An early exploratory incision is justifiable in almost any case of abdominal tumour, excepting for very self-evident uterine myomata which grow slowly and give no trouble, and for equally evident cases of malignant disease already extending beyond the limits of the primary growth.

Tapping should be discarded, except in cases of acute lung disease where the bulk of fluid seriously increases the dyspnœa, whilst the patient cannot at the time bear an operation. There are manifest objections to paracentesis. I recently made an exploratory incision in a patient whose abdomen was tensely distended with ascitic fluid. The uterus was fixed, and there were masses in Douglas's pouch. I was naturally inclined to believe that there were free papillomatous growths in the pelvis. But as the ascitic fluid escaped, a large cyst appeared, firmly bound down by adhesions. It rose from the pelvis and pushed up the pelvic peritoneum on the right side. On tapping it clear fluid escaped, but it was irremovably fixed by papillomatous growths to the pelvic viscera. Had I tapped instead of exploring, I might have wounded some gut adherent to the front of the cyst; and as the escape of fluid would have exposed the outline of the cyst, I should have been obliged to explore. In fact, tapping usually means two operations instead of one. It is just in the most doubtful cases that tapping is most dangerous. I have known the intestine to be wounded by a very good surgeon, and the puncture of a cystic uterine myoma mistaken for an ovarian cyst, has led sometimes to dangerous hæmorrhage, and sometimes to fatal results from damage to uterine sinuses.

Infancy and age are in themselves no bar to operation. Menstruation is sure to be taken into account by the operator. He will not go out of his way to operate during menstruation, for, amongst other objections, it is not possible to clean the patient thoroughly at the period. The dangers of operating when the catamenia are present have, however, been greatly exaggerated. "Psychical disturbance" is dreaded; but I find that the postponing of an operation because a period has set in prematurely often causes unusually severe disturbance, physical as well as mental. A "show" brought on prematurely, usually by the passage of the sound, is probably an indication of purely local changes confined to the endometrium. It must be remembered that hysterectomies undertaken during profuse show, sometimes truly catamenial, do not so far seem to fare worse than those performed when there is no such show. In ovariotomy no bleeding mucous cavity is opened. I admit that premature show, after ovariotomy, is often preceded by a rise of temperature. But I know from experience that there is usually no rise when ovariotomy has to be done during the true period.

The presence of other diseases makes ovariotomy complex rather than complicated. Phthisis when not very active is improved by the removal of the cyst, but irregular rises of temperature must be expected during convalescence. Acute bronchitis is a dangerous condition, and one of the few where paracentesis is allowable, at least when there is clear evidence that a large unilocular cyst fills the abdomen. The ovariotomy should be done as soon after recovery as possible. Chronic bronchitis is of necessity more or less serious. Certainly the tumour must be removed, for it aggravates the visceral disease; but some of such cases are likely to be lost. I refer to cases with chronic pulmonary disease and ovarian tumour complicated by bad adhesions or suppuration. Care must be taken to strap the lower ribs after a tumour has been removed from a patient with bronchitis. The same precaution is advisable whenever very big tumours or unusually large collections of fluid are removed—above all in old subjects. Albuminuria with visceral disease is serious, but when a large cyst or tumour exists, yet the patient feels quite well, and has a good appetite, the presence of a small amount of albumen in urine of a fair specific gravity, freely secreted, means, I know, that the urinary tract suffers through the presence of the tumour. After its removal the albuminuria disappears. I have had three such cases last October. I cannot dwell on the long question of the relation of this purely mechanical albuminuria to the albuminuria of pregnancy. The latter ceases after the tumour, that is the fœtus and placenta, has come away. But eclampsia in cases of ovarian tumour is unknown. There is no ovarian nephritis like the nephritis of pregnancy. I showed, however, in your Hospital *Reports* for 1878, how often the kidneys are unsound in ovarian disease.

Coming to treatment immediately before the operation, I may say that any rational manner of clearing the bowels is suitable for the patient. There are two irrational practices. One is the administration of purgatives within twenty-four hours before ovariotomy. Distressing tenesmus or troublesome and dangerous flatulence may ensue after the operation. Another is carelessness about scybala till within a day or two of the operation. This may allow large masses to remain after the passage of a fair collection of hardened fæces when the final enema has been given.

Free scrubbing of the abdomen and careful disinfection of the umbilicus are always needed, and the pubes should be shaved on the night before the operation, if possible. A vaginal injection is then given, and vulvar hair washed with weak sublimate lotion.

Now we come to the operation itself. Full details would fill a small book, whilst as you are all more or less acquainted with general surgery, much would be superfluous in such a publication. I will dwell upon as much as we can reasonably consider.

Too many sponges and instruments are of course objectionable, and as Mr. Lockwood tells you, they increase the chances of sepsis. On the other hand, too few involve inconvenience. I have several times seen much trouble when only ten forceps and sponges were at hand. I use eighteen of each, and find that number quite convenient.

Antiseptic precautions on the principles of Lister are, taken as a whole, advisable. I must once more refer to the limits of a paper, and I will content myself with saying that I still use carbolic acid, taking care, however, to squeeze all sponges before introducing them into the abdominal cavity. The operator should take off at least his coat, waistcoat, tie and collar, and wear a well-washed mackintosh apron. The waterproof sheet for the abdomen is not absolutely needed, and there is some danger that the adhesive material may be septic.

Let the surgeon when he takes up the scalpel remember general principles. There is no mystery about the abdominal wound as a wound, no glamour about silkworm gut, no magic in drainage. The abdominal wound must be sufficiently long. Avoid the Continental practice of beginning with a four- or five-inch incision to remove even a self-evident thin-walled cyst. On the other hand, do not try feats of dexterity and "record beating," such as getting out a large cyst through a two-inch wound; never hesitate to enlarge the wound if necessary. Fear of stultification, the idea that it "looks so bad" to enlarge the wound, is a vicious principle. In July I removed a pair of colloids which completely filled the abdomen, through a three-inch incision. One cyst had burst already; the other, I admit, ruptured during extraction, but I knew that I should have to flush the peritoneum. The washing out proved just as easy as if the wound had been six inches long, indeed there was less trouble from prolapsing gut. I could see all the contents of the abdomen clearly, up to the under side of the liver. This is usually the case when the distended parietes collapse after the delivery of a large tumour. On the other hand, a relatively long wound is always needed when there is little or no distension of the abdomen, as resistance is great, so that it is hard to use the hand freely, and at the same time thick, healthy recti are easily bruised. Fixed tumours and swellings that suggest suppuration, especially pyosalpinx, require a long incision from the first. The surgeon, in determining the length of the wound, need not trouble about the hernia question. That must be taken into account when the wound is closed.

Hæmorrhage from the wound is to be stopped with pressure-forceps, which can be removed a few minutes afterwards. In taking off a forceps from a large vessel, torsion is advisable. Ligature involves not only waste of time but also needless handling of the tissues. The forceps should not be left on during the further part

of the operation, as their bows and handles are in the way and get fouled.

The abdomen being opened, the surgeon can ascertain the nature of the tumour. The most urgent question at this stage is what to do if an apparently irremovable malignant tumour be detected. An abdominal incision in a doubtful case is perfectly justifiable; tapping for diagnosis is dangerous and seldom throws any light on the case. Do not suppose that an incision is quite harmless when sarcoma or diffused papilloma is discovered. Such cases bear operation badly, but the worst is known, the worst being the death, soon after operation, of a patient bound to die soon. Fortunately we can never be sure of malignancy until the symptoms are more than pronounced. On April 17th, 1892, I operated, with qualms of conscience, on a young woman, aged 22. The abdomen measured over 47 inches in circumference, its tissues were œdematous, and the veins engorged. The fluid was evidently free; the uterus was fixed. The legs were much swollen; the patient was greatly emaciated. I made an incision, forty-five pints of dark brown fluid escaped, and papillomatous disease of the appendages was discovered. I succeeded in removing both. The patient is now alive. When a cyst is opened and found irremovable and full of malignant matter, it is best to let the cyst wall fall in, hæmorrhage being checked by pressure. Fixing the malignant cyst to the lower angle of the wound and draining will usually be followed by fungous protrusion, infection of the abdominal wound, and terrible discomfort. I have seen several grim samples of the effects of this practice. On the other hand, it is not safe to suture the cyst wall over the aperture made to explore its contents, as malignant tissue will not heal, but is very likely to slough.

Let us turn from this gloomy subject and suppose that a removable cyst or tumour is discovered. Tapping and the separation of adhesions are now well understood. The rapid breaking-down of septa in a multilocular cyst only requires a little "nerve." The hand outside the abdomen must co-operate with the hand inside the cyst; the assistant should merely steady the cyst with a forceps placed on each side of the rent. But if the wall be repeatedly torn, or if the operator gets his hands through the back of the tumour into the peritoneal cavity and sees intestine prolapsing into the cyst, the state of things is in no way desperate, and with a little coolness the tumour may usually be made to slide out. The operator should immediately clamp the pedicle with a big pressure-forceps close to the tumour, as there is hæmorrhage to check. One reason why Sir Spencer Wells had such relatively good results thirty years since is that he would boldly tear to rags the upper part of a big, soft, vascular, multilocular tumour, and deliver the lower part with rapidity, so that he got at the vessels quickly. Tumours allowed to grow big were common in those days. Until such a tumour is got out, the surgeon cannot secure the vessels.

Enucleation can only be understood after considerable experience in assistance at abdominal operations. A more teachable subject is the ligature of the pedicle. In all average, as well as in all broad pedicles, the outer border, including the ovarian vessels, should be tied separately. No. 3 silk (China twist) is best, unless the vessels be very big. This practice, introduced by Thornton twenty years ago, has probably saved dozens of lives at least. Penrose, of New York, goes further, and advocates separate ligature of the inner border also, that is to say, the tube and adjacent tissue are tied; the middle of the pedicle is left to take care of itself. No doubt, the first danger is slipping of the outer border, and the second danger is slipping of the inner border. I should shrink, however, from leaving the middle part unligatured, even when a normal ovary is removed for the relief of fibroid uterine disease.

Double transfixion of broad pedicles is not trustworthy. I have found that the first and second loops may loosen each other, or one may get cut through when the third is being tightened. Again, splitting of the pedicle is not rare; and three loops confuse the operator. I now adopt Penrose's practice of securing both borders when the pedicle is very broad, but in addition I transfix the middle of the pedicle, at one point only, with stouter silk (No. 4), and find the single transfixion sufficient. The ends of the silk must be made to lie accurately in the grooves already formed by the ligatures at the two borders. After enucleation of a burrowing cyst, the pedicle often shrinks to very small proportions. In other cases no true or anatomical pedicle exists, and all that can be done is to secure all bleeding vessels and to check oozing by pressure—a task not necessarily difficult.

Sloughing of the pedicle is almost unknown, though some operators leave it very long on the distal side of the ligature. I fully discussed this question in the Hospital *Reports* for 1877-8, and in the *Obstetrical Transactions* for 1893. As I observed in 1874, the pedicle "is literally nursed by the warm peritoneum that surrounds it, and it lies in the human body, a marvellous heat-producing apparatus that keeps it in a regular temperature of about 100° F., which is more than any wool, poultice, or ingenious but complicated artificial instrument could do." In the abdominal wound the sutures are not in the same condition as the ligature round a pedicle. The sutures ought *not* to be tight, else they will cut or strangulate the tissues which anteriorly are on the surface of the body. The pedicle ligature *should* be tight, to make the distal or proximal tissues bulge as much as possible, so as to meet. They lie deep in the body, and lymph soon unites them.

China-twist silk is the safest material for ligature. No. 4 is the best size for a broad or medium pedicle; No. 3 for the outer border. Thin silk makes the best groove, but is apt to snap when being tied—a troublesome accident, as it involves more handling of the pedicle. Thick silk is objectionable for small pedicles, as are met with in cases when a small ovary, fellow to an ovarian tumour, is removed on suspicion; and is especially objectionable when the tissues of the pedicle are inflamed. Thick silk interferes with the bulging process, so the distal and proximal tissues do not lie well in contact. In one case where a silk ligature was discharged nine weeks after operation, the operator informed me that he "used too much silk, and silk of too great thickness — No. 5 braided—and used two ligatures."

The manner of applying the ligature being settled, what knot is best? I object to teaching the use of the Staffordshire knot; it savours too much of a feat; it can be done easily, no doubt, with a little exercise of dexterity, but it involves the passing of the loop over the tumour or over the stump of the pedicle, which under many circumstances is clumsy or even objectionable. The Thornton ligature is excellent; a loop of silk is passed through the pedicle and then cut. Then there are two pieces of silk. They are twisted once round each other on one side; then the ends of the one silk are tied round the inner or tube side of the pedicle. The ends of the other are tied in the groove made on the outer border by the separate ligature on the ovarian vessels. Nevertheless, there are some disadvantages in this ligature. It is more difficult in practice than it appears to be in theory. In pulling the second knot tight the first loop may be loosened if it has been faultily tied, or cut if firmly tied. Sometimes, too, the pedicle gets split. I always employ the knot introduced by Dr. Bantock, which I have seen in use several hundred times, and have found much the easiest kind to apply safely. The loop passed through the pedicle is not cut. One end of the silk is passed round the inner side of the pedicle and then through the loop. The two ends are drawn well parallel to each other firmly till the inner half of the pedicle is well tightened against the loop in the middle of the pedicle. During this manœuvre care must be taken not to pull outwards, else the loop or the silk passing through it will be cut or badly frayed. Lastly, the two ends are tied firmly against the outer border in the groove, if there be one of the ligature round the ovarian vessels. This knot should never be tied against the anterior or posterior aspect of the pedicle. In securing a pedicle on the left side the ends are best tied on the inner side of the pedicle after the manœuvres described above.

No doubt if the pedicle be very broad it is advisable to sew the edges over the raw surface. The importance of this precaution has, however, been much exaggerated, for as I know from having made in years past numerous post-mortems of patients who died after ovariotomy, a cap of clot forms on almost every pedicle—small or large, thick or thin, raw or sewn over. Hence the danger of adhesion to intestines after the first few days becomes theoretically equal in all cases. Intestinal obstruction after ovariotomy is unfortunately not rare, but is seldom due to adhesion to the *raw* surface of the pedicle. Sir Spencer Wells's classical case, which most unfortunately led him to distrust the ligature and to persist in the use of the clamp for several years, was not an example of adhesion of bowel to the *raw* surface of the pedicle. The bowel encircled the pedicle, adhering to its *sides*, and the free surface was suppurating. At the operation the pedicle was found to be only one third of an inch thick, and it was considerably pulled about; indeed, the clamp and cautery were used unsuccessfully, and the operator transfixed and ligatured the mangled pedicle afterwards.

We must now do what must never be done in practice, we must hurry on to the end of the operation. Free oozing from purely parietal adhesions and from the pelvis may often be checked by simple pressure of sponges. A large flat sponge is placed in the peritoneum, immediately behind the parietes, and one or two round sponges are packed in Douglas's pouch. Should the oozing be free, more than one sponge is advisable, as the aim is to ensure firm pressure for several minutes. The sutures being applied the sponges

are withdrawn, and if there be fair evidence that the oozing has stopped, no flushing or drainage will be needed. Remember that from the first the sponges must be *pressed*, not *wiped*, against the peritoneum and viscera. *Wiping causes fresh oozing*, as I know from observation in the days of strict "toilet of the peritoneum," as the sponging process was termed. Spencer Wells was misunderstood. That authority would mop up ordinary ovarian fluid thoroughly and close the wound with impunity, and we may do the same. But if the effused material be the least suspicious in any way, or if the oozing be very wide in area, and the patient appear already the worse, flushing is advisable. Hot water checks hæmorrhage; it displaces clots, pieces of papilloma, and other solid as well as fluid matter. It is a great counteracter of shock, and assuredly acts like transfusion, some of the injected water being undoubtedly absorbed by the vessels. Whatever apparatus be used, make sure that the water runs in a full gentle stream. The aim is to flush out foreign bodies and fluid, so that a trickling stream is insufficient; besides, the water gets cold if poured in too slowly. Flushing is particularly needed when colloid matter has escaped into the peritoneum. Colloid cannot be well removed by sponges. Drainage of Douglas's pouch when colloid lies in it is dangerous, for that material cannot mount up the tube, but germs can get down to it. Now colloid is a first-class cultivating medium. So flush it out by all means, and put not your trust in drainage-tubes.

Yet the tube has its use. When the sponges left in the pelvis during the introduction of the sutures have clearly failed to stop oozing, and when products of inflammation remain in the pelvis, the tube should be introduced. It is true that there are certain qualifications to this statement; I have closed the abdomen, for instance, with impunity, after removing two large suppurating tubes, the stumps being touched with iodine. When a pedicle is unhealthy, either from inflammation, or infection with new growth, the tube may certainly irritate it, and hence we often hear of the casting up of a ligature through a drainage-tube hole. Drainage depends much on the merits of individual cases. To leave an untied suture in the parietes when the tube is inserted, and to tie it when the tube is removed, is a bad practice. The track is apt to suppurate, and the chance of healing by first intention has long passed when the ligature is tied.

(*To be continued.*)

The Therapeutic Value of Food in Infantile Diarrhœa.

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A Paper read before the Abernethian Society on December 3rd, 1896.

DURING recent years a considerable amount of attention has been devoted to attempts to find a trustworthy and reliable antiseptic for the intestinal tract. Such drugs as naphthalin, beta-naphthol, benzo-naphthol, resorcin, salol, creasote, and others have been widely advertised and used for the treatment of various gastric and enteric disturbances. So much is this the case that it seems to me the value of food in the treatment does not receive the consideration which its importance merits.

In a short paper it is not possible to put before you even a summary of the different intestinal disorders and the therapeutic value of various foods in such conditions, so I propose to limit the discussion to infantile diarrhœa. Perhaps this may seem to you a very trivial subject and one of slight moment; but if you remember that serious results often arise from the most trivial causes, and that the happiness of a whole household may depend on the regularity of an infant's bowels, you will admit my justification.

A baby is normally predisposed to diarrhœa by its tendency to pass liquid or semi-liquid stools. This is partly due to the nature of its food, and partly dependent on physiological and anatomical factors. Moreover peristalsis is active, and the sphincter ani not very powerful. The fæces are not retained in the colon and rectum in the same way as in the adult, in whom time is allowed for the absorption of the watery constituents.

It is not necessary for my purpose to enter into the pathological conditions leading to enteric disturbance in infants. The majority of attacks of infantile diarrhœa are dependent on the quality or the quantity of the food supply, and I only propose to consider the nature of the food supply and the therapeutic treatment of the attack by alterations in the diet. There is not the least objection to the administration of a small dose of some simple purgative, such as castor oil or calomel, as a preliminary to dietetic treatment, and in many cases such a dose is of great advantage by clearing out irritant matters.

The therapeutic value of a food depends on three factors:

1. The composition of the particular food.
2. The assimilability of the food.
3. The physiological value of its component parts.

These three factors are liable to great variation. Thus the composition varies with the kind of food. The assimilability varies according to the food, its mode of preparation, the manner of administration, the composition of the digestive juices, the condition of the absorbing surfaces, and the idiosyncrasy of the individual. The physiological value depends, strictly speaking, on the composition; it is the sum of the physiological value of the component parts. The value to the individual varies, however, according to the requirements of that individual, and the conditions under which the food is administered. The requirements of the individual vary with the age, conditions of health or disease, and idiosyncrasy. All foods contain one or more of five *proximate principles*, namely, water, proteids, carbohydrates, fats, and salts. The therapeutic value of these proximate principles varies under different conditions of health and disease, in different individuals of the same age, and in the same individual at different ages Let us take these principles in the order named.

Water we may regard as a pure compound of hydrogen and oxygen, disregarding for the moment the micro-organisms and salts it so commonly contains. Although water is not nutritious in the usual sense of the term, it is essential to life, and constitutes more than half the entire body weight. The physiological activity of a cell depends on a due supply of water. Abstract water from an amœba, and it enters into a condition of *dry rigor*, it becomes physiologically inactive. Proportionally to its weight the infant requires more water than the adult, the relationship of its body surface to the body weight being much greater than in the adult, and hence the loss of water by the skin more in proportion. The infant, therefore, feels the effects of loss of water more severely than the adult. The rapid wasting in infantile diarrhœa is due to the rapid elimination of fluid by the alimentary tract, and to counteract this it is generally advisable to permit the free administration of plain water or nutritious well-diluted fluids by the mouth.

Water is of use to digestion by diluting the food and enabling it to be more readily attacked by the digestive ferments, and to be more easily absorbed. It assists in the secretion of pepsin and hydrochloric acid. This acid is of very great value in preventing fermentative processes in the stomach. According to Bunge, the quantity of free hydrochloric acid in the gastric juice of man exactly corresponds to the amount necessary to prevent the development of putrefactive organisms. In many lower animals the gastric juice is rich in acid, but contains no ferment. If the acid is absent or diminished in amount, the food may undergo putrefactive or fermentative changes in the stomach, and be then passed onwards through the pylorus in a condition liable to set up diarrhœa. Any steps which you may take to ensure the proper digestion of the food in the stomach, will assist you to cure the diarrhœa, and indeed I consider these steps the most important in the treatment.

I would here add a warning against the indiscriminate use of the antiseptic drugs. Many of them in small doses interfere with the activity of the digestive ferments, and in large doses may inhibit them entirely. Let me warn you, too, against the administration of opium in the early stages of an attack. The diarrhœa is nature's means of eliminating the irritant matter or the poisonous products. Opium will often make the patient worse by delaying or stopping the process of elimination.

Water possesses still further value. It is an incentive to elimination by the kidneys and skin, and probably enables the organism to get rid of poisonous ptomaines and toxines which are formed by the putrefactive changes in the alimentary canal, and give rise to the profound symptoms in cholera infantum.

Water must be given warm or hot. Iced water is not indicated except in the presence of severe vomiting, and even then should be used with great caution, as infants do not stand cold well. The best treatment of severe vomiting in these cases is to wash out the stomach with warm water, using a funnel and soft long rubber tube; irritating products in the stomach are got rid of by this means.

All water given to an infant must be previously boiled. So many microbes are present in this fluid, some of which are pathogenic, that it is by no means the harmless drink temperance orators would have us believe.

Proteid.—It is hardly necessary to point out to this audience that proteid is the form in which nitrogen is assimilated by the organism, and that a due supply is necessary for the purposes of nutrition and growth. In proportion to its weight the infant requires more than the adult, because it has to provide for repair of tissue waste and the building up of new tissue. In both breast-fed and bottle-fed infants it is not uncommon for diarrhœa to be set up by too high a percentage of proteid in the food. The first results are generally colic and constipation, and then diarrhœa is induced by the irritation from retained matter. The therapeutic value of proteid in these cases is a negative one. Reduce the amount to what is suited to the digestive capacity of the child, and in nine cases out of ten you will cure the diarrhœa. It is impossible to fix exactly what percentage is suitable. For a very young infant 0·5 per cent. may be sufficient; for an older child 1 to 2 per cent. It is by no means rare to come across infants who can digest 3 to 4 per cent. without difficulty.

The best plan is to begin with a low percentage, and increase it according to the character of the stools and the progress of the child. The absence of small whitish curds from the stools is the best indication that the proteid in milk is properly digested. Infants at the breast often suffer from indigestion, colic, and constipation or diarrhœa, from the high percentage of proteid in the mother's milk. The best method to lower the percentage is to increase the length of the intervals between the nursings. The more frequent the suckling the higher is the percentage of proteid in the breast milk, the gland being stimulated to increased metabolism. In these infants the indigestion gives rise to constant crying, which the ignorant mother ascribes to hunger; she gives the child the breast whenever it cries, and rapidly makes it worse.

Active exercise is also of value in reducing the proportion of proteid, and it may be still further reduced by giving the infant, before it is put to the breast, a small quantity of plain boiled water, barley or oatmeal water, or lime water.

In the case of hand-fed infants it is a simple matter to reduce the percentage of proteid to a digestible minimum. The average amount in cow's milk is 3·75 to 4 per cent., and the milk can be diluted accordingly. From eight samples of London milk I obtained an average of 4·06 per cent., the proteid being calculated from the nitrogen estimated by Kjeldahl's process. The proportion of caseinogen to lact-albumin was as two to one.

Sometimes we meet with cases in which diarrhœa occurs whenever cow's milk is given. This may be due to a faulty condition of the cow or to its diet. The milk of cows fed on turnips, linseed cake, or brewers' grains is very likely to cause diarrhœa. Or it may be that deleterious changes have taken place in the milk before delivery. Or perchance the child's diet has been trifled with to such an extent that it is marasmic, and hardly capable of digesting anything.

Under these circumstances it is allowable to give condensed milk. Let me not encourage you to resort to condensed milk as soon as you find evidence of gastro-intestinal disturbance. To do so implies ignorance of the art of dieting an infant, or the carelessness of inexperience. Practice leads me to assert very strongly that it is rare for a child to be unable to digest cow's milk, properly prepared and administered. Similarly let me try and persuade you that predigestion of the milk is not the *summum bonum* of infantile feeding, and the panacea for intestinal derangements.

The wide use of condensed milk is not an argument in its favour. More than half a million hundredweight is imported annually. Can we wonder that infantile mortality is enormous?

If after you have duly considered the nature of the diarrhœa, the milk supply, and the surroundings of the patient, you think it advisable to prescribe condensed milk, be careful to order a good brand, and not leave the choice to the mother. I can recommend the Anglo-Swiss Milkmaid brand, the Ideal brand, the Viking brand, and the well-known Nestlé's. Many varieties in the market are made from skimmed milk, and should not be used even in cases of diarrhœa.

When prescribing condensed milk pay attention to the following considerations. The composition of the different brands varies considerably, according as they are made from skimmed milk, whole milk, or milk with added cream. The same brand is liable to vary and not maintain its original composition. Do not use any kind without, at any rate, knowing its composition as stated on the label, or as given in one of the text-books which refer to it.

Always calculate the amount of dilution necessary to reduce the percentage of proteid to the required figure, and then note the proportion of fat and sugar in the resulting fluid.

Beware of cheap samples. Beware of too great dilution. Warn the mother against blown tins, and against keeping an opened tin in a hot or dirty room. In all cases regard the food as a temporary expedient, and pass on to modified cow's milk slowly, but as soon as possible.

The advantages of condensed milk in diarrhœa are that it is a more or less nutritious food, in which the proteid can be reduced to low percentage, and the casein in it does not form large curds in the stomach. It is usually sweet and readily taken. It is very easily prepared. The evil effects are largely due to the degree of dilution generally practised. One teaspoonful to a bottle of water will make the mixture look like milk, and the child gets its stomach filled, but does not obtain much nourishment. If the fluid is mixed in proper proportions the child gets too much sugar, as a rule, and too little fat. Most condensed milks have a large amount of cane sugar added as a preservative. If nothing is added to the original milk before condensation, it resembles cow's milk when diluted with three to four times its weight of water. Remember it is not as cheap a food as cow's milk when it is given in proper amount. It is useful while travelling.

Fat.—This food and the carbohydrates are of value for the production of heat and the maintenance of the body temperature. Fat is of more value than the carbohydrates by virtue of its larger percentage of carbon, and smaller percentage of oxygen. Excess of fat may give rise to simple intestinal catarrh, and diarrhœa in such cases may be produced. It is an uncommon result. Human milk rarely contains too high a percentage of fat, and artificial mixtures almost invariably too little. It must be given with care to marasmic infants, or fatal diarrhœa may be induced. Only a small percentage should be allowed in the treatment of diarrhœa.

Carbohydrates are of value for the production of heat and as a source of muscular energy. The percentage varies within very small limits in human milk, and I have seen no cases of diarrhœa due to excess of lactose in breast milk. In artificial feeding an excessive amount is often given. Almost all condensed milks and patent foods contain a large amount, in the form of cane sugar, maltose, or starch. Excess of sugar may only lead to obesity, but it often induces intestinal catarrh, flatulence and offensive diarrhœa. These results are produced by fermentative changes in the sugar.

In the presence of diarrhœa the question may arise as to the variety of carbohydrate to be allowed.

Cane sugar is split up in the intestine into dextrose and levulose, both of which are sources of glycogen. Lactose also undergoes inversion, and is not absorbed as such. A very large quantity of either of these sugars must be given by the mouth before traces are found in the urine. Both cane and milk sugar are secreted in the urine when injected subcutaneously in 10 per cent. solution (F. Voit). From the fact that lactose is the variety present in human milk, it is natural to suppose that it should be used in artificial feeding. On the other hand, experience shows that it can be replaced by cane sugar without injury. Any evil effects from the use of cane sugar in preference to lactose are due to excess. Being cheap, handy, and pleasant to the taste, there is every temptation to use too much. Cane sugar ferments less readily than milk-sugar.

Maltose is contra-indicated in the presence of diarrhœa, to which it often gives rise. The laxative properties of Mellin's Food are due to maltose.

Starchy foods may be given according to the age of the child. The amylolytic functions of the salivary glands and pancreas are very feeble in infants, and should not be unduly taxed. Starch requires considerably more digestive effort than either lactose or cane sugar. The granules vary to a great extent in the different foods containing starch, and are not all digested with the same degree of ease.

The starch in barley and oatmeal is more readily inverted by the saliva than that of wheat and rice. Barley water is useful in the presence of diarrhœa, but oatmeal water is contra-indicated on account of its slight laxative action. The former has a small advantage as a diluent of cow's milk in rendering the curds produced by acid or rennet somewhat finer, but much greater value is ascribed to it than is warranted by experiment. Rice water is of even more value than barley water in the presence of diarrhœa.

Salts are occasionally present in the milk of anæmic women to such an extent as to be injurious. Sodium chloride is normally present in the milk of all mammals. There is about six times as much in cow's milk as is present in human milk. It is not necessary to add salt to the former in artificial feeding, unless a cereal preparation is used as a diluent. Almost all vegetable products contain an excess of potassium salts, and sodium salts are often necessary to counteract their effects. Rice contains remarkably little potassium salts. The addition of salt to milk renders it a little less readily coagulable by rennet. Lime, phosphorus, and iron are all necessary, but there is no special indication for their use in the treatment of diarrhœa. A slight exception may be made in the case of iron, for an anæmic child is

more liable to such attacks and recovers less easily. It is best given in the form of organic compounds, as in the yolk of egg or raw meat juice.

Granting that you have a sound knowledge of the above facts and of the composition of the available foods, the question arises, how are you going to treat a simple case of diarrhœa? An attempt has been made to differentiate two groups of cases on a dietetic basis. One variety is due to albuminous decomposition. The symptoms are those of profound constitutional disturbance, such as is seen in cholera infantum. The stools are very offensive, and often contain mucus and blood, and sometimes epithelial flakes, such as are seen in true cholera. Laboratory research shows that micro-organisms produce more poisonous products when grown in albuminous or gelatinous media than in carbohydrates. In such cases carbohydrates have both a nutrient and antiseptic value. According to Kobert they lessen albuminous putrefaction in the intestine by producing lactic, acetic, butyric, and other organic acids, which exert a destructive action on the putrefactive bacteria. More probably their beneficial effect is due to the deprivation of the microbes of their favourite nutrient media, which have been eliminated by the diarrhœa, and are not replaced through the food supply.

In the other variety of diarrhœa the stools are acid and offensive, with a peculiar sour smell; and there is much flatus and intestinal colic. This kind of attack is generally due to acid fermentation of excessive carbohydrate food, and is readily cured by allowing only an albuminous diet for twenty-four hours, and then permitting only a small percentage of carbohydrate in the food, in some easily digestible and absorbable form, such as cane-sugar or rice water. Overfeeding is a common cause, the child being only relieved of the excess of food by an attack of diarrhœa.

The Methods of Investigation and Treatment.—In every case examine the diapers and note the character of the stools. Do not be content with the description of either the mother or nurse, however intelligent you may consider them. Note the colour, odour, reaction, presence or absence of curds, mucus, and blood. Inquire as to the number of motions in the twenty-four hours. Some infants normally have four actions daily during the first few months of life. In the case of a breast-fed infant pay great attention to the frequency and regularity of feeding. After the second month of life the infant only requires the breast every three hours, seven feeds a day. Insist that the feeds are given regularly. If in spite of this the motions contain curds, take steps to diminish the amount of proteid in the mother's milk and, if necessary, have an estimation of the percentage present made. Pay attention to the diet of the mother. Plenty of plain nutritious food is all that is necessary. Strange and made-up dishes, dinner parties, and irregularity in meals, are liable to be injurious. Anything that upsets the digestion of the mother is liable to interfere with the quality of the milk, and lead to digestive or intestinal disturbance in the child. Too much stout, ale, or beer in the mother's diet is sometimes the cause of infantile diarrhœa, especially if it is at all "hard," or if taken last thing at night. Do not allow the child to suck at a dirty "Job's comforter," or even at a clean one, and insist that neither mother, nurse, nor visitors be permitted to put a finger in the child's mouth to keep it quiet or rub its gums. Nor should the child be allowed tastes of other foods than the breast milk.

If the child is hand-fed, inquire carefully into the amount of food given at each feed, the composition of the food, the number of feeds in the twenty-four hours, the intervals between the feeds, the temperature of the food when given, and the mechanism of administration.

If a bottle is used insist that it should be boat-shaped, as simple in construction as possible, easily cleaned, and having a soft rubber nipple which can be readily everted and scraped. Many cases can be cured by simply discontinuing the use of a dirty bottle with a long rubber tube, full of cracks containing sour decomposing milk.

Note how the milk is stored. It should be kept where there is no possibility of it absorbing foul odours, or getting contaminated in other ways. Find out how each feed is prepared, and how long it is prepared before it is given. Each feed should be prepared just before it is given, unless several are made at a time and sterilised in bottles plugged with clean cotton wool.

All these points may seem to you very trivial, but it is upon a careful investigation like this that your success will depend. What is the use of dietetic or drug treatment for any case as long as the exciting cause of the diarrhœa is in operation? I am often lost in amazement at the instructions given to the mothers of infants with diarrhœa, and perhaps even more commonly at the neglect to give any proper instructions. Almost every case of simple diarrhœa can be cured by attention to these trifling details. More severe and more prolonged attacks may require further treatment. Thus cholera infantum can rarely if ever be cured by diet alone, and no one would be justified in relying entirely on such means.

Before concluding I must refer to a few special foods which are often of great value.

Egg-albumen can be prepared by shaking up the white of a new-laid egg with six to ten ounces of pure water. The addition of a pinch of salt is of value. It should be well shaken for five to ten minutes, and then strained through fine muslin to separate out the flakes of membrane. This is the most nutritious and the purest proteid food that I know of; it is practically devoid of micro-organisms when freshly prepared. It is also very digestible. It may be given alone or with the addition of sugar, condensed milk, cream, or some flavouring agent.

Raw meat juice is another valuable proteid food in a very digestible and assimilable form. It contains also a considerable amount of iron. From the nature of the food and the mode of preparation, it is generally far from sterile, and may, moreover, be the means of introducing the cysticercus of a tapeworm, though this is but a slight risk.

If iron is required I prefer to give the yolk of egg, which contains it in an even more assimilable form than the hæmoglobin of raw meat juice. It is only necessary in the presence of anæmia and chronic diarrhœa.

Pasteurised, boiled, and *sterilised* milk have all much about the same value. They are rather indicated as preventives than as curative. Few cases recover by merely changing to such a diet. Raw milk should never be allowed for infants in towns. Sometimes it is urged that milk should be stopped entirely for some days, and in occasional cases it is advisable, the child in the meantime being fed on bland nutritious fluids, such as egg-albumen and barley or rice water, with the addition of small quantities of cream if desired. I have not often found such a course of diet necessary, and as a rule would give in preference a very weak solution of cow's milk, say one in six of water with 5 per cent. of sugar, or weak condensed milk with egg-albumen and rice water. Some physicians are fond of weak gelatinous solutions, broths, soups, and beef-tea, but in my experience the benefit of these is doubtful, and their nutritive value small. Gelatinous foods are certainly contra-indicated in the presence of albuminous decomposition. Peptonised milk is not as a rule of much value, and at times gives rise to diarrhœa. At the moment I cannot recall a case which recovered by simply changing the diet to peptonised milk, and I remember several in which it was absolutely injurious or useless. If it does good, it is by remedying the condition on which I have laid so much stress, namely, it increases the digestibility of the food, and prevents the formation of masses of undigested casein.

A weak solution of cream, sugar, and rice water is a very digestible and bland food, and contains little casein. Of stimulants, whisky is the best. It is the purest at a moderate price. It may be used freely in bad cases, but is not necessary in a simple attack.

In conclusion let me advise you to treat every case on its merits, and not to stick to any hard and fast rules, and apply such rules to rich and poor, to the well-nourished and the marasmic, to the intelligent and the stupid, in the heat of a tropical climate and the cold of more northern regions. Bear in mind that almost all cases are due to errors in diet, and that on a suitable food the patient will rapidly recover. With care and patience investigate every case, and think no detail too trivial for even the greatest among us, if it leads to the recovery of a single life, or the relief of a single symptom.

Clinical Notes from a General Practice.

THE following are short notes of some interesting cases I have met with in general practice.

A CASE OF OSTEITIS DEFORMANS.—The two photographs, which were taken by Mr. Gordon Thomson, show very well the distinctive points of the disease, and there is no need here for me to detail each bone separately.

The *family history* is as follows:—Mother had rheumatism—one sister had four attacks of acute rheumatism; but the interesting point is that I believe a brother of my patient suffered from the above disease. I was always told that he suffered from an affection of the spinal column, and on the only occasion on which I saw him I noticed his head was shaped exactly like my patients, but I could

not go into his case as a doctor, as I was not asked. He died of "apoplexy."

Past history.—She had kept a small school for the last sixteen years of her life, suffered from monetary worries, and also had to look after the invalid sister referred to above. Ten years before her death she broke her right thigh at junction of upper and middle third. This united well with shortening. She died in January, 1892, of bronchitis, aggravated by the fixation of her chest. I got leave to examine the head.

Post-mortem.—Bone easily sawn through. When the skull-cap was taken off it was found to be in some places quite an inch thick, and the diploe was all but obliterated; the sutures were all obliterated, dura mater in places adherent, vessels of cortex congested; no hæmorrhage was discovered; no excess of fluid in the ventricles. The whole brain appeared rather soft.

Mr. Edgar Willett was kind enough to report on the piece of bone I sent him, and stated that it showed the usual characters of the disease, viz. generation, rarefaction, and alterations in the arrangement of the Haversian canals. The specimen is now in the Hospital museum.

The next is a case of myxœdema, and the photographs show her before and after the thyroid treatment.

Is married, æt. 49. Had a life of constant anxiety. Had four children and one miscarriage; not been well for years. Says swelling came on about six years ago. Previous to that she says she swelled an immense size, more especially in the stomach; this passed off.

Present condition.—Face typical; moles on arms and shoulders; no thyroid (?) felt; *urine* normal; heart normal; on inner side of left ankle has varicose eczema.

Family history.—Nothing marked.

Treatment.—She first took two tabloids, five-grain a day at first, but had to go back to one, as she noticed when taking two that she was "weak." She experienced tingling in the skin all over the body, and especially over the varicose eczema, which she says is decidedly better, but she is using tar ointment as well. On leaving off the ointment the eczema did not do so well. She commenced treatment on September 20th, 1894, and is continuing it now. She notices now, and also her friends, that she speaks more quickly, is more intelligent, bright, and energetic, and feels younger altogether. I believe she is now taking one tabloid daily.

The next is a case of mitral disease in a married lady æt. 36, and in whom profound hemiplegia occurred, and which passed off completely within eight hours.

Past history.—First seen October 27th, 1894. Has had heart disease for several years, no definite history of rheumatism, but when a girl used to have rheumatic pains. Has had three children, and went through her confinements easily except the last, when she had an infarct in the right lung, which set up pleural effusion, which was present at the above date, causing dulness up to angle of scapula on the right side with very faint breath-sounds. There was no shortness of breath, and she had just come up from the country, rather a long journey. On the evening of November 11th she became very ill, collapsed, cold clammy sweats all over head, and pulseless; breathing very rapid and laboured. Brandy was injected into each arm, and also strychnine.

Dr. Goodhart saw her soon after with me. Two and a half pints of clear serum were drawn off. All through the night she was in a most critical state, and during the night digitalin gr. $\frac{1}{100}$ was injected. Next morning she was decidedly better.

November 16th.—Since last note the fluid in right chest has been increasing again, and this morning I was called at 8 a.m., and found her profoundly hemiplegic in left side, face, tongue, and limbs. Speech muffled and mental condition clear. The nurse said the present condition was noticed at *7.30 a.m.*, and at *11 a.m.* I had a note from her husband to say that she could move her arms and legs, and when I saw her at 1 p.m. she moved left arm and leg easily, and facial muscles were rapidly recovering; tongue was protruded straight, and she could whistle and frown.

Drs. Gee and Goodhart saw her on the 18th, and agreed that the hemiplegia was due to embolism, and Dr. Gee mentioned that he had seen cases where hemiplegia had passed off as soon, and then gangrene had occurred at the extremities of one of the limbs. He mentioned also at the time that the fact of facial paralysis was no bar to the diagnosis of hysterical paralysis. The left wrist and fingers now only show the effects of brain irritation; the wrist is flexed and the fingers are hyper-extended. This condition is worse at times than at others.

November 19th.—One and three-quarter pints of clear serum were again drawn off.

November 23rd.—Mr. Walsham drew off one and a half pints of clear serum to-day. During the day she got much worse, breathing very quickly and vomiting incessantly; pulse very feeble. She was thought to be dying by Dr. Gee and myself, but the next morning she was quite comfortable, sitting up in bed and reading the paper. The rigidity of the wrist and fingers has passed off, and Dr. Gee says that probably this rigidity is hysterical. She is very nervous, and at times it is very difficult to say whether it is "nerves" or impending death.

On January 5th, 1895, she was very well indeed. There was no fluid, and she was walking down a long flight of stairs daily, and had not felt the hard winter very much. The rigidity of the left wrist came and went at times. Since this last note she has died. Some friends advised her to try homœopathy.

The fourth case shows transient delirium arriving two and a half hours after completion of labour, and passing off within twenty-four hours.

It occurred in a lady æt. 42, who was delivered at twelve o'clock in the morning, on April 26th, 1894, of a male child. The forceps were applied to the head on the perinæum, chloroform being administered, but not to the surgical degree. After labour she was douched with sublimate solution (1 in 3000). The same afternoon, about three p.m., she was delirious and very restless, throwing herself about the bed and tossing her arms about, and did not recognise people about her. This lasted about twenty-four hours, and gave way to bromide of potassium.

The next day she could not distinguish colours, such as pink and blue and white objects, and she said "things magnified first and then diminished." This condition soon passed off.

There was a cloud of albumen in the urine. Within a week after she was doing very well; no delirium and no colour-blindness.

July 8th.—I have a note to the effect that there is still a cloud of albumen.

December 12th.—Albumen still present.

I might mention also that the question of drink could be eliminated in this case.

The next is a case of pleural effusion in a boy, which is said to have been present a year.

This case was recognised quite accidentally, as the boy and two brothers had chicken-pox, and the mother mentioned that the boy had a very serious form of heart disease. On examining the heart I found the apex-beat outside the nipple line, and dulness at right base up to the angle of the scapula; the heart-sounds were clear. He was a delicate-looking boy æt. 7; sweats at night. The finger ends were markedly clubbed. His chief symptom was great shortness of breath on any slight exertion.

A hypodermic needle established the diagnosis, and the next day ten ounces of serum were drawn off. A week after the fluid had formed again apparently. There was dulness to angle of scapula and high up in axilla. Breath-sounds very faint, and vocal vibration felt over dull area. He was tapped again, but with no result.

He was put on iron and Sp. Æth. Nit., and exercises night and morning to expand the lung, viz. inhaling a deep breath and then slowly expiring through the nose, keeping the mouth shut. About fourteen days after last note his right side moved whilst drawing a deep breath, and breath-sounds could be heard distinctly. To make a long story short he completely recovered, and has never been bothered with his chest since, and that is six years ago.

HAYDOCK WILBE.

[Excellent photographs of the case of osteitis deformans, and of the case of myxœdema, showing the effect of treatment with thyroid, were forwarded to us with this paper. We greatly regret that want of space precludes their reproduction here.—ED.]

Notes.

IN another column we publish an account of the Christmas entertainment. Never before has a performance of the Amateur Dramatic Club met with such unanimous praise. The stage manager, Mr. Valerie, is indeed to be congratulated on the success of his efforts. Thanks are at the same time due to another old member of the Club, Mr. C. W. Emlyn, whose help, both at the rehearsals and

during the production of the piece, did much to ensure success.

* * *

DR. DONALD MACALISTER has been appointed Examiner in Medicine in the Victoria University.

* * *

MR. H. HOLMES, B.A., has taken the degrees of M.B. and B.C. in the University of Cambridge.

* * *

DR. J. B. HURRY, of Reading, has been elected a Vice-President of the Obstetrical Society.

* * *

DR. J. W. PICKERING, who holds the George Henry Lewes Studentship, has recently made a communication to the Royal Society upon some proteid-like bodies which he has succeeded in synthesising from some of the crystalline proteid derivatives. This is the nearest approach hitherto made towards the synthesising of proteid bodies, and marks an important advance in our knowledge of chemical physiology. The proteid-like colloid bodies which Dr. Pickering has succeeded in preparing give most of the colour reactions characteristic of proteids, and resemble very closely, in their properties, the so-called nucleo-albumins.

* * *

EVERY medical man must have heard with gratification of the announcement made on New Year's Day of the elevation to the peerage of one of the most distinguished surgeons of his time—Sir Joseph Lister. This, the first occasion on which a peerage has been conferred upon a member of the medical profession, is no ordinary event. It makes one reflect seriously upon the meagreness of the honours to which members of our profession can attain as compared with other careers in life. Turning to the Medical Directory of 1896, we find that there are exactly ten medical baronets and sixty-five knights, including military and civil knights, Commanders of the Bath, Knights Commanders of the Star of India, Knights Commanders of St. Michael and St. George, and Knights Bachelors. This is a truly meagre list of medical dignitaries out of a total number of medical men of 34,284, when compared with the number of peers, baronets, and knights included in the professions of the Law, Army, and the Church.

* * *

THREE LECTURES ON INTUSSUSCEPTION will be delivered in the theatre of the College of Surgeons on Monday, Wednesday, and Friday, February 8th, 10th, and 12th, at 5 o'clock each day, by Mr. D'Arcy Power (Hunterian Professor). Students of Medicine as well as members of the College are admitted to the lectures. We publish the syllabus in full:

LECTURE I.—Monday, February 8th. *The Minute Anatomy of Intussusception.*—Introduction.—Early changes in the intestine produced by intussusception.—Changes due to an experimental invagination in a cat compared with those occurring in a spontaneous intussusception in a dog.—Causes of hæmorrhage in intussusception.—Intestinal changes in the later stages of acute intussusception.—Changes taking place in the intestines of adults as a result of intussusception: (*a*) acute; (*b*) chronic.—Changes associated with exfoliation of the intestine.—The minute anatomy of the less usual forms of intussusception.—Conclusion.

LECTURE II.—Wednesday, February 10th. *The Pathology of Intussusception.*—Introduction. (i) Anatomical details connected with the ileo-cæcal angle.—The method of examination.—The mesentery and its length.—The ileo-colic folds and pouches: their varieties and importance.—The relative width of the ileum and colon at different ages.—The ileo-cæcal valve and its varieties. (ii) Physiological factors.—Results derived from experiments with irritants, purgatives, eserine, and barium chloride.—Effects of experimental invaginations in animals.—The force of peristalsis. (iii) Pathological factors.—Spontaneous reduction and its causes.—Strangulation of the invaginated bowel and its mechanism.—The results of strangulation:—gangrene; adhesions; ulceration; peritonitis.—Conclusions as to the cause of intussusception deduced from the anatomical, physiological, and pathological factors, assisted by clinical data.

Lectures I and II will be illustrated by Lantern Slides.

LECTURE III.—Friday, February 12th. *The Treatment of Intussusception.*—Introduction.—Classification of Intussusception.—The conditions which influence its treatment. Review of the methods of treatment.—Importance of early treatment. (i) Treatment by irrigation.—The experiments of Mr. Mortimer and of Mr. Mole, their lessons and fallacies.—The capacity of the large intestine in children.—The uses and limits of treatment by irrigation.—The recurrence of intussusception after irrigation, its causes and prevention.—After-treatment. (ii) Treatment by abdominal section. (*a*) In reducible intussusception.—The management of simple cases and the dangers of the operation.—Recurrence after laparotomy.—Local paralysis of the bowel after reduction: its causes and treatment.—Complications of simple cases. (*b*) In irreducible intussusception.—Causes of surgical irreducibility: adhesions; moribund intestine; gangrene.—Palliative measures: Barker, Jessett, and Greig Smith's operation.—Halsted's method of lateral anastomosis.—Artificial anus.—Enterectomy.—Reasons for preferring the non-mechanical method in the treatment of intussusception.—Advantages of Maunsell's operation, and experimental invaginations successfully treated by it.—Conclusion.

* * *

WE hope to give in our next issue a full description of the Martha Theatre, with all its newly acquired gorgeousness.

* * *

OUR friends at Guy's are to be congratulated upon their energy and enterprise. This month has witnessed the birth of a second magazine—the *Guyoscope*. This is not intended, as at first seems, to be a rival to the Guy's Gazette, but its originators announce that they will deal only with the lighter side of hospital life—"the unconsidered trifles." Two of the "examination questions" run as follows:

1. When did you buy a microscope? Where is it now? What was the number of the ticket?

2. Describe the collateral circulation of a hansom driving to catch a train at Euston after ligature of the Strand, London Bridge, and the Embankment.

We heartily wish them the success their enterprise deserves.

Amalgamated Clubs.

NEW MEMBERS.

S. H. Gibson.	T. A. Mayo.
R. J. Waugh.	E. W. Dall.
E. B. Smith.	D. C. O'C. Finigan.
H. Vaughan Pryce.	S. W. Curl.
J. Stirling-Hamilton.	J. M. Plews.
G. N. Gwyther.	A. S. Petrie.
F. D. Parbury.	J. O. Bennett.

ASSOCIATION FOOTBALL CLUB.

IN the first round of the London Senior Cup we have drawn Old Carthusians. The tie will be played at Leyton on Saturday, January 23rd.

The following is the draw for the Hospital Cup:

1st Round.

A Charing Cross...*v*....St. Bartholomew's.
B Middlesex .....*v*....St. Mary's.
C Guy's .....*v*....University.
D London .....*v*....St. Thomas's.

Semi-final.

E Winner of D.....*v*....Winner of B.
F Winner of A.....*v*....Winner of C.

Final.

Winner of E.....*v*....Winner of F.

Abernethian Society.

THE last meeting of the Winter Session was held on December 10th. Mr. Wroughton showed an interesting case of congenital absence of the radius in a child. Mr. Hewer read a paper entitled "Indications for Trephining." He enumerated a considerable number of cases which he had seen in which trephining was resorted to, dealing with the signs and symptoms which indicated such a course of proceeding in each case. In cases in which much violence is suspected, scalp wounds should be enlarged if necessary, and a thorough examination of the bone made.

The secretaries acknowledge with many thanks the donation from an old member of the Abernethian Society, Mr. R. Henslowe-Wellington, of twenty copies of old addresses and 'Proceedings' of the Society, viz.—

'Proceedings' from 1877 to 1889 inclusive. Addresses by Sir James Paget, Dr. Matthews Duncan, Mr. Henry Power, Mr. Pemberton, Mr. Butlin, Dr. Lauder Brunton, and Dr. Norman Moore, delivered between 1882 and 1889.

The following papers will be read during January:

January 21st, by Mr. W. T. Holmes Spicer, F.R.C.S., on "Eye Symptoms in General Diseases."

January 28th, by Dr. Claye Shaw, on "Bruises and Injuries in the Insane."

MID-SESSIONAL ADDRESS.

THERE was a good attendance, including members of the staff, the matron, and many nurses, to welcome Dr. E. G. Browne on January 14th. The junior staff, doubtless on account of their manifold duties, were but sparsely represented. The president, Mr. S. Gillies, introduced Dr. Browne, and called upon him to deliver his address on "A Chapter in the History of Cannabis Indica." The address fell in no way short of the high anticipations that had been formed. It was full of the charm which was expected from one who, as the president said, had wandered in the gardens of Shiraz, by the tomb of Hafiz, who had been among the lotus-eaters himself. In answer to many inquiries we are glad to say that the address will shortly appear in full in the pages of the JOURNAL. Dr. Norman Moore, who proposed the vote of thanks, was in his happiest vein, and Mr. H. Williamson seconded in an appropriate speech. Dr. Browne, in replying, said there were many strange things in East and West, but to him the strangest of all was to find himself in the medical theatre at Bart.'s lecturing to Dr. Gee. And thus ended a very pleasant evening. We hope Dr. Browne will not allow another ten years to elapse before revisiting his old hospital.

St. Bartholomew's Hospital Amateur Dramatic Club.

ANNUAL CHRISTMAS ENTERTAINMENT.

THE fifteenth Christmas dramatic performance given by the members of the St. Bartholomew's Hospital Amateur Dramatic Club, took place upon Wednesday, Thursday, and Friday, January 6th, 7th, and 8th, 1897. The first performance was, as usual, witnessed chiefly by the patients of the hospital, and at the conclusion of the entertainment those members of the Amateur Dramatic Club who had taken part were hospitably entertained at supper by the President of the club, Mr. W. H. Cross.

On the evenings of the 7th and 8th the hall was filled to overflowing by an appreciative audience, composed of the governors, the members of the staff, their friends, and a large number of the hospital nurses and students.

The programme opened with the overture "Titus" (Mozart), efficiently rendered by the members of the Hospital Orchestral Society, which was followed by Lennox Home's farce, *Two Heads are Better than One.* This piece suffered from its somewhat antiquated construction, but was well rendered, and, thanks to the efforts of the members of the cast, it was well received by the audience. Mr. J. Hobday gave an admirably drawn character sketch of the senile Mr. Strange; while Mr. J. Valerie, as usual, caused roars of laughter by his excellent impersonation of the idiot, Sammy Maxwelton. Mr. B. J. Collyer contributed another of his most successful female impersonations as Ellen Strange. The character was never overdrawn, and was always kept within the bounds of refinement. The part of the elder Maxwelton was played by Mr. L. Morris, while Mr. A. Hawkins did well in the somewhat difficult part of Charles Conquest.

At the conclusion of the farce a short musical programme was contributed by the Musical Society.

The first number, a glee, "The Rustic Coquette," by Dr. Champneys, who also conducted it, was received with well-deserved applause.

Mr. P. Wood sang "Fill me, boy, as deep a draught" on Thursday, and on Friday gave "Oh! that we two were Maying," with "Tell her I love her so" as an encore. He has a fine voice and a sympathetic method, and scored one of the successes of the evening. Then followed another glee, "Full Fathom Five," by C. Wood, which met with a cordial reception; after which came the usual interval of fifteen minutes for refreshment.

The principal item of the programme which followed was a reproduction of Edward Rose's version of Anstey's well-known story, "Vice Versâ," which met with such a marked success when first produced by the Amateur Dramatic Club six years ago.

The club had the advantage of the help of two old and tried members of the 1891 cast in their original parts.

Mr. John Valerie, as Dick Bullitude's Body, was thoroughly in his element, especially in the second act, when, as the unfortunate old gentleman who has come to school in place of his son, he narrowly escapes a severe flogging at the hands of the outraged schoolmaster. Mr. Brownlow, as Mr. Bullitude's Body, was also most humorous; the contrast in manner between the irascible father and the irrepressible schoolboy caused shouts of laughter. The sight of the punctilious old gentleman skipping about with the *abandon* of a boy of twelve convulsed every one.

Good as these old favourites were in the former presentation of the play, there is no doubt that they far exceeded themselves on this occasion.

The Eliza of Mr. Boulton, the Clegg of Mr. Tweedie, and the Shellack of Mr. Pollard were all meritorious performances.

It is not until the second act that many of the characters appear, and of these Mr. J. Hobday's Dr. Grimstone was quite first-class.

We have often commented upon Mr. Hobday's capacity as an actor, and we believe him to be one of the club's greatest acquisitions. He has always invested his characters with interest and played them with finish, but his Dr. Grimstone is the best thing he has done yet.

Of the crowd of schoolboys, who were individually and as a whole better than those in 1891, Dr. Meakin as Tipping was quite excellent. He looked and played his part most naturally.

Mr. Tweedie as Coggs, who is always in a scrape, raised his small part into an important position by his funny performance. Mr Farley played extremely well as Chawner, and his representation of the part met with much praise.

Mr. P. B. Grenfell played Dulcie Grimstone. The part presents very great difficulties to a male representative, as can be readily understood when it is remembered that Dulcie is a child of fourteen. That Mr. Grenfell came successfully through this his first appearance on any stage, and that he looked very pretty, is no mean praise, and the thanks of the club are due to him and those other gentlemen who sacrifice themselves to the art by taking upon themselves the enormous difficulties of female representation.

The orchestra gave a capital rendering of German's difficult "Gipsy Suite" between the acts.

Altogether this year's Christmas entertainment must be considered a thorough success.

Mr. Valerie is to be warmly congratulated on his stage management, for on him fell the entire responsibility of the production of the plays, owing to the fact that Mr. J. Boyan was compelled, on account of his professional duties, to relinquish his position as stage manager.

Mr. S. Pollard ably directed the musical portion of the programme, and Mr. H. Boulton officiated as acting manager.

Sir George Humphry.

MR. HOWARD MARSH has kindly forwarded us a copy of a letter written by Mr. Crosse, of Norwich, introducing Mr. Humphry to Sir James (then Mr.) Paget fifty-seven years ago. How true was Mr. Crosse's opinion, and how truly prophetic his letter, subsequent events have shown. In the certainty that it will be of great interest to our readers we reprint the letter in full. It runs thus:

Norwich;
Sept. 15/39.

DEAR SIR,

My excellent pupil, Mr. George Humphry, will enter at Bartholomew's. He is one of the right sort—a regular hard worker, and if health can be maintained he will do your school credit. I shall feel obliged by your giving him all the opportunities of improvement you can; a little of your direction and encouragement will be of much service to him.

I am, yours very truly,
J. G. CROSSE.

[The letter was addressed to "— Paget, Esq."]

The Rahere Lodge, No. 2546.

A REGULAR meeting of the Rahere was held at Frascati's Restaurant, Oxford Street, W., on Tuesday, January 12th, 1897; W. Bro. Alfred Cooper, F.R.C.S.Eng., in the Chair. Dr. Lovell Drage and Dr. Eddowes were elected joining members of the Lodge. Bros. Owen Lankester, Horton-Smith, Gow, Laming Evans, Sloane, Perram, and McLean were passed to the second degree, Bros. Keetley and Newton were raised to the third degree, and Mr. G. V. Worthington was initiated into masonry. The treasurer, Bro. Reece, reported that the funds of the lodge had been sufficiently

flourishing to enable him to invest £300 in India three per cent.

Forty-nine brethren afterwards dined together, W. Bro. Sir Reginald Hanson, Bart., M.P., W. Bro. Col. Cooke, and W. Bro. Anderson Bates of Grimsby being amongst the guests.

Round the Fountain.

By LINCOLN CRANBORNE.

"THE Chronic has fled from the excitements of the country," remarked the Fresher. "I met him this morning in the Abernethian room, looking more cynical than ever."

"Cynicism is too often a cloak for ignorance," replied the Enthusiast, who had been ploughed in the M.B.

"Ah!" said the Chronic dramatically, having just arrived on the scene. "I was sorry to hear of your ill success, but 'tis as well not to rush through your exams.—'experientia docet.'"

"Does it?" asked the Fresher, with an air of great innocence. "Yes, it does," replied the Chronic, "it teaches self-effacement; I understand you got through 'Bones,' which is a pity."

"It seems to me," said the Enthusiast, "that, progressing in the same direction as at present, boys will soon be coming up to the Hospital *before* they go to school! The sucking babe getting used to the smell of the dissecting room is even now quite a common if distressing sight."

"'Tis indeed true," agreed the Chronic, "that parents heedlessly throw their sons into London digs at a very early age, where the devouring landlady mothers them at a profit, and the excitements of London claim them as brothers."

"They can go into college," suggested the Fresher.

"They can," said the Enthusiast ominously.

"I am afraid," continued the Chronic, "that many a promising light in the medical world has been hopelessly 'snuffed' from this very cause."

"What, going into college?" asked the Fresher.

"Certainly not!" snapped the Chronic. "Going into other places."

"What would you propose as a safeguard?" inquired the Enthusiast.

"In the first place, more supervision," replied the Chronic. "I would place men up to the time they pass their Second under the same or similar regulations as those which govern Oxford or Cambridge colleges."

"Being hunted by proctors and bulldogs down Piccadilly would certainly be exciting," remarked the Fresher.

"But how would you distinguish the first or second year man?" demanded the Enthusiast.

"I should make it compulsory for every Fresher to go into college, or some similar institution, for at least two years," answered the Chronic.

"What about Cambridge men, and other important personages?" remarked the Fresher.

"I should make no distinction," said the Chronic loftily.

"There is quite enough already," exclaimed the Enthusiast.

"It is sad," sighed the Chronic after a pause, "to see chivalry and a spirit of adventure so in abeyance amongst medical students generally. There was a time, even within my memory, when the Lord Mayor's Show would not have passed without some demonstration—a sign of the presence of those estimable virtues already mentioned. I can still call to mind many acts of undoubted daring, many deeds done in the interest of some beautiful but squashed damsel—studentdom was loose in the City on the 9th of November, 1886. A pocket Gray and the Fountain hold sway ten years later."

"You are, then, a lover of rowdyism and so forth?" surmised the Fresher.

"My dear sir!" remonstrated his elder, "a man can be young without being a blackguard, and yet not ape the manners of a recluse."

"Some time ago," said the Enthusiast, "there was a murmur as of many rats running. I did hear something about a rat h——."

"Hush!" whispered the Chronic; "that is forgotten. Were not the rioters admonished and their names recorded in the unspeakable book?"

"The honour of the Hospital must be upheld," said the Enthusiast; "and a gold medallist is of more value than the captain of the football team."

"Value is a purely relative term," replied the Chronic; "either gentleman you mention would be useless in the sphere of the other."

"I still maintain——" began the Enthusiast.

"Your unfortunate opinions," interrupted the Fresher. "But let us 'Cross.'"

St. Bartholomew's Hospital Photographic Society.

THE Annual Exhibition of the above Society was held in the School Smoking Room on Monday, December 14th, 1896. Upon this occasion the usual display of photographs, upon the walls of a room at other times given up to the worship of quite another goddess than Art, was supplemented by an exhibition of lantern slides in the Anatomical Theatre, as well as by a demonstration of X rays by Dr. Lewis Jones. The growing interest excited by the application of this latest branch of photography to medical science rendered its introduction into the programme of the evening especially fitting, and the Society is fortunate in possessing, as one of its Vice-Presidents, so able an exponent of radiography as Dr. Jones. To an exceedingly appreciative audience Dr. Jones explained briefly and clearly the essential facts connected with X-ray work, and followed his remarks by a practical demonstration of considerable portions of the anatomy of a small patient provided from one of the wards, by the use of the luminous screen. Several lantern slides, which had been reproduced from Dr. Jones' negatives by Mr. P. G. Harvey, were then shown, to illustrate the types of "cases" in which the X-ray process had been successfully used for diagnostic purposes.

Mr. F. Womack, also a Vice-President of the Society, then threw upon the screen some very instructive pictures of astronomical subjects, those representing the recent solar eclipse being of great interest. Slides of a more general and miscellaneous character, including, however, some rather good landscape pictures, were then exhibited by Messrs. Harvey, J. L. Maxwell, and Klump.

Of the pictures exhibited in the Smoking Room, our criticisms may perhaps be pardonably guided by those of the *Amateur Photographer*, who "ought to know." We read there that "to Mr. J. Hussey must be awarded the palm for pictorial work. Some of his photographs, *e.g.* 'On the Edge of the Forest' and 'Seascape,' were quite up to Pall Mall form, while one or two of his snap-shots of London streets left little to be desired either in regard to composition or technique. Mr. Mawer, F.G.S., made a good second with half a dozen exquisite little landscapes, the treatment of which displayed considerable artistic feeling." "Sunrise on Glencoe," a bromide enlargement by Mr. J. L. Maxwell, was a great success; for cloud and mist effects it certainly could with only rare good fortune be beaten. Were we inclined to be fastidious, however, we should suggest how much the picture might have been improved by suitable framing. Dr. Lewis Jones exhibited some fine carbon enlargements, and Messrs. Tatchell, Pearson, and Phillips also contributed very worthily to the series of larger pictures. Mr. Tatchell, in addition, showed an album of smaller attempts, some of which manifested exceedingly careful work.

So much for members' private work. To borrow from our contemporary again, "the feature of the exhibition was undoubtedly the fine collection of 'hospital case' studies contributed by the Society's hon. sec., Mr. T. J. Horder. Those who are familiar with the exigencies of ward work know the difficulties that attend bedside photography, but Mr. Horder has surmounted these with characteristic energy, and the museum at Bart.'s is accordingly the richer. Some sixty photographs of rare and curious cases have been made during the year, and the St. Bart.'s Hospital Photographic Society in consequence surely justifies its existence. It is to be hoped that the young blood of Bart.'s will carry on the work of the Society in equally able fashion when professional life calls from its

membership the present leaders of this 'linked ring'—Messrs. Coleman, J. P. Maxwell, J. L. Maxwell, Pearson, Drury, and the two hon. secs., Messrs. T. J. Horder and P. G. Harvey,"—a hope which we join hands in heartily expressing.

For Diagnosis.

A JEWISH patient's ailments are thus described in a letter to the H. P.:

"He don't sleep day and night of his guts. He has a big fright, and faints. He sicks too much, last night he nearly died. I wrote this because I can't speak no English."

The following illustrates another "horrible malady:"

"This is just how I am feeling, as what should support the bowels, has given way right up each side of the chest and stomick, and like as if all the springs and artery's had given way; I feel it right down my legs, and even to the bottom of my heels, and was very relax for four or five days, and seem as if something is twisted in my stomick and right down to my back aractum, and the back aractum is very delicate and dose not act well, and the food don't seem to go in the stomick or right direction, and gush's of wind comes up through the stomick almost choke me, and often vomit up my food after meals, and the trunk of my neck and back of my head pains me very much at times, and pains in the shin-bones, and legs swell, and sweat at night very much, and feel so weak and languish, and lose flesh."

Obituary.

WILLIAM BRUNSKILL.

MR. W. BRUNSKILL, of Staindrop, Darlington, died on November 27th, 1896. He was in practice at Staindrop for over sixty years. He received his medical education at St. Bartholomew's, and was a pupil of Abernethy. When a student Mr. Abernethy presented him with his portrait—an honour which he reserved for his most deserving pupils.

Appointments.

DAVEY, ERNEST LL., appointed Medical Officer to the Walmer District of the Eastry Union, and the Second Division of the St. James's Division of the Dover Union. Also appointed Medical Officer of Health to the Walmer Urban District Council, and Surgeon to the Walmer Castle Court of the Ancient Order of Foresters.

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MARTIN A. COOKE, M.R.C.S., L.R.C.P., L.S.A., to be Surgeon-Lieutenant in the 2nd V.B. Gloucester Regiment, to date December 2nd, 1896.

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FERNIE, F. E., M.R.C.S., L.R.C.P., appointed Medical Officer for the Swynnerton District of the Stone Union.

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FISHER, J. C., M.R.C.S., L.R.C.P., appointed House Surgeon to the Radcliffe Infirmary, Oxford.

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NEWTON, LANCELOT, M.R.C.S.Eng., L.S.A., reappointed Medical Officer for the Sawtry District of the Huntingdon Union.

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MITCHELL, A. M., M.B., B.C.Cantab., appointed Resident Medical Officer to Queen Charlotte's Lying-in Hospital.

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PADWICK, J. C., M.R.C.S., L.R.C.P., appointed Junior House Surgeon to the Salop Infirmary, Shrewsbury.

WILLIAMS, C. W., M.R.C.S., L.R.C.P., L.S.A., appointed Surgeon to the Workhouse, and Medical Officer for the Smallburgh District of the Smallburgh Union.

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HEDGES, J. A., appointed Medical Officer of Health to the Rural District of Eaton Bray.

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BENNETT, WILLIAM EDWARD, F.R.C.S.Eng., has been appointed Resident Surgical Officer to the General Hospital, Birmingham, *vice* C. Leedham-Green.

Examinations.

FINAL M.B. CAMBRIDGE: *Medicine.*—G. A. Auden, R. F. Baird, W. L. Brown, L. K. Harrison, C. F. Lillie, H. Maturin, H. B. Milsome, L. B. Rawling, R. de S. Stawell, H. Williamson, H. W. P. Young, and H. C. T. Langdon.

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FINAL M.B. CAMBRIDGE: *Surgery and Midwifery.*—A. E. Jeaffreson, S. Verdon Roe, H. W. Shewell.

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SECOND M.B. CAMBRIDGE: *Pharmaceutical Chemistry.*—R. T. Worthington.

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SECOND M.B. CAMBRIDGE: *Anatomy and Physiology.*—W. E. Burnand, H. St. C. Elliott, W. W. Wingate-Saul.

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FIRST M.B. CAMBRIDGE: *Chemistry and Physics.*—L Orton and B. B. Sapwell.

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M.D. LONDON.—E. M. Cuffe, S. E. Gill, J. H. Griffith, J. O. Harvey, W. E. Lee, C. H. Perram, E. W. Reichardt, W. Shears.

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B.S. LONDON.—*1st Division:* E. G. D. Drury, J. H. Hugo. *2nd Division:* A. R. J. Douglas, G. B. Price, A. R. H. Skey.

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L.S.A. PRIMARY.—*Materia Medica:* T. B. Haig. *Anatomy and Physiology:* C. S. Hawes, N. Walmisley. *Anatomy:* G. R. Lucas. *Physiology:* J. C. S. Dunn, T. M. Talbot.

Reviews.

DEFORMITIES. A Treatise on Orthopædic Surgery intended for advanced students. By A. H. TUBBY, M.S., F.R.C.S. London: Macmillan and Co., 1896. Price 17s. net.

This book is based upon the author's experience in Orthopædic Surgery for the past few years at the National Orthopædic Hospital, the Evelina Hospital for Sick Children, and at the Westminster Hospital. In addition, the Orthopædic Clinics on the Continent have been visited, and the methods of treatment carried on in these places observed. The author states that the object of the work is to give a succinct account of the present state of knowledge concerning deformities, and not to be a record of his own work. Having this object in view, he has made

free use of the writings of the acknowledged authorities on the subject, both in this country and abroad. In the main he has succeeded in his attempt, and a very instructive and practical volume has resulted. The book is divided into five sections, each one of which is subdivided into chapters. The first section deals with deformities of the spine; the second with deformities of the neck, chest, and upper extremities; the third with rachitis and its resulting deformities; the fourth with deformities of the lower extremity; and the fifth with ankylosis and the deformities which result from paralysis.

In the treatment of genu valgum, Tubby advocates the routine treatment by osteotomy, and does not recommend the use of the osteoclast; he quotes the saying, "The osteoclast should become an historical surgical reminiscence; whilst Macewen's chisel should be canonised as the ideal scientific corrector of bone deformities."

The chapter on congenital disease of the hip is very good, and gives a *résumé* of the present state of surgical knowledge on the subject. He advises the non-operative method of treatment in these cases, preferably by Paci's procedure; but if an operation is requisite in an advanced case he thinks that of Lorenz is the best, and most likely to be followed by a good result.

Numerous cases are reported in connection with the various subjects, most of them being taken from the author's case-books.

The book is illustrated by fifteen plates and 302 figures, 200 of which are original.

A HANDBOOK OF SURFACE ANATOMY AND LANDMARKS. By BERTRAM WINDLE, D.Sc., M.D., M.A. Revised and enlarged by T. Manners-Smith, M.A., M.R.C.S. Post 8vo. Pp. 143. Price 3s. 6d.

This book is intended for anatomical students in their first and second years, as a guide to that knowledge of human anatomy which can be gained without the use of the scalpel and forceps. The book fulfils to a great extent the purpose for which it has been written, and will no doubt prove of much use to the student of anatomy if it is used in connection with one of the manuals of dissection. As a rule "dissection guides" give too little surface anatomy, and on this account the student during his first and second years does not apply the knowledge gained by dissection to the acquirement of facts which will be of much use to him when learning surgery later. The authors are not quite constant in their surface markings; thus on page 53 they say that "the angle of Ludwig is opposite the lower border of the fifth dorsal vertebra," and on page 64 that "the trachea bifurcates at or just below the angle of Ludwig and opposite the fourth dorsal vertebra." Fortunately, however, there are few discrepancies of this kind.

Correspondence.

To the Editor of St. Bartholomew's Hospital Journal.

SISTER MAGDALEN FUND.

DEAR SIR,—On December 21st I received such a kind letter from Miss Lock (formerly Sister Darker), that I think your readers would like to see a copy of it; it runs thus:

"Station Hospital, Rawal Pindi, Punjab, India;
November 26th, 1896.

DEAR SIR,—I am very sorry to see by the Nursing Record of November 7 that dear old Sister Magdalen (Mrs. Boyce) is in money difficulties, and that her son is so ill as to be admitted to the Brompton Hospital. She and I were good friends, when I was "Sister Darker," for nearly five years, therefore I am anxious to help her now, and I enclose a draft for Rs. 200 (= £12 7*s.* 4*d.*) towards the fund which I understand you are collecting for her benefit. Please let me know if at any future time any further collection is being made. I should be very glad to subscribe if I am able to do so.—Believe me, dear sir, yours faithfully, C. G. LOCK.

To EDGAR WILLETT, Esq.

IN the list which you published in the December number there occurs a slight miss print, "J. H. Manuel, Esq.," should be "J. H. Maund, Esq."—Yours faithfully, EDGAR WILLETT.

	£	s.	d.
Amount already acknowledged	48	9	0
Miss Lock	12	7	4
Christmas gift from a Bart.'s Nurse (anon.) ...	1	0	0
Total	£61	16	4

Births.

DAVIES.—January 5th, at 23, Finsbury Square, the wife of Arthur Templer Davies, M.D.Cantab., F.R.C.P., of a daughter.

DRAGE.—December 15th, at Burleigh Mead, Hatfield, Herts, the wife of Lovell Drage, M.A., M.D.Oxon., of a daughter.

HEATH.—January 6th, at No. 3, Cavendish Place, Cavendish Square, W., the wife of Charles J. Heath, F.R.C.S., of a daughter.

ROGERS-TILLSTONE.—On December 28th, at Ditton, Maidstone, the wife of J. M. Rogers-Tillstone, M.R.C.S., L.R.C.P.Lond., of a daughter.

RUSHWORTH.—On January 4th, at Beechfield, Walton-on-Thames, the wife of Norman Rushworth, M.R.C.S., L.R.C.P., prematurely, of a daughter, who survived her birth only a few hours.

STANLEY.—January 4th, at Brabourne, Kent, the wife of Hubert Stanley, M.B.Cantab, M.R.C.S., L.R C.P., of a son.

Marriage.

BACA—VERANO.—On December 14th, at Mrs. Verano's residence, Gibraltar, B.P., by the Right Rev. G. Canilla, D.D., Bishop of Lystra, Vicar Apostolic of Gibraltar, Arthur Cajetan, eldest son of the late Joseph Baca, Esq., Knight Commander of the Royal Spanish Order of Isabella the Catholic, to Helene Victorina, youngest daughter of the late Manuel Verano, Esq.

Deaths.

FLETCHER.—January 5th, at 98, Harley Street, W., Christine Elisabeth (Betty), daughter of Herbert Morley and Ethel Frances Fletcher, aged nearly two years.

JALLAND.—January 8th, at Rollestone House, Horncastle, Robert Wallace Jalland, M.B., of Horncastle, and Assouan, Upper Egypt.

ACKNOWLEDGMENTS. — *Guy's Hospital Gazette, St. Thomas's Hospital Gazette, St. Mary's Hospital Gazette, The Guyoscope, The Student (Edinburgh), The Nursing Record, The Hospital, The Charity Record.*